



Distribution costs in home-care production: what are the effects of local regulations on productive efficiency and spatial equity?

Quitterie Roquebert

► To cite this version:

Quitterie Roquebert. Distribution costs in home-care production: what are the effects of local regulations on productive efficiency and spatial equity?. Rencontres d'Aussois , Dec 2015, Aussios, France. hal-01294742

HAL Id: hal-01294742

<https://hal.science/hal-01294742>

Submitted on 29 Mar 2016

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Distribution costs in home-care production: what are the effects of local regulations on productive efficiency and spatial equity?

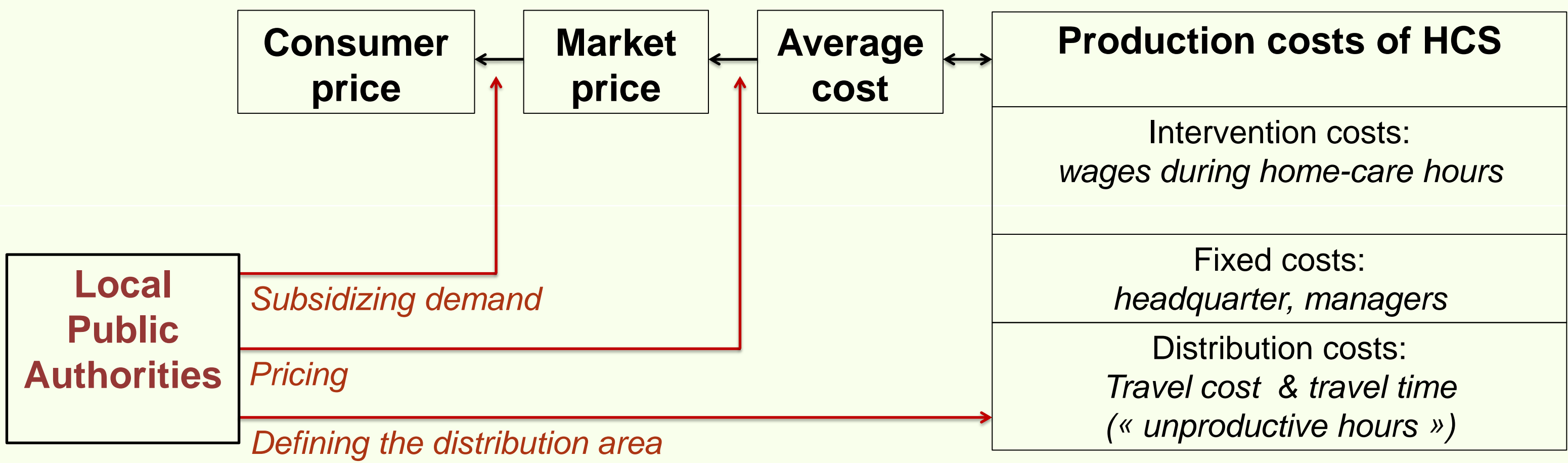
Quitterie Roquebert
Centre d'Economie de la Sorbonne, Université Paris 1 – Panthéon Sorbonne
quitterie.roquebert@univ-paris1.fr

Introduction

In France, public policies encourage home care for the elderly.
→ Development of a specific sector : home-care structures (HCS).

Particularities of HCS:

- ❑ Going at the customer's home: implies **distribution costs**
- ❑ Regulation of HCS by local districts:
 - 1) **Pricing**: they price the regulated HCS according to their average production cost
 - 2) **Distribution area**: they define the area that HCS will serve within the district
- ❑ Demand is subsidized by the APA policy of the basis on the market price



→ Distribution area affects production costs, market price and consumer price

Key words

Supply of home-care services
Disabled elderly (in the community)
Decentralization of public action

Literature

- ❑ French public reports: mostly from interviews with HCS managers, show that production costs are affected by the geographical location of customers.
- ❑ Academic analysis of pricing process and APA policy but few elements on production costs in HCS
- ❑ Up to now, as far as I know, no empirical work on the effect of spatial location of costumers on production costs for this kind of structures
- ❑ Theoretical contributions on spatial equity and cost sharing in networks and distribution services (Fleurbaey & Trannoy, 1998; Crampes & Laffont, 2014)

Figures on distribution costs

Travel cost: from **1,03%** (HCS serving only urban areas) to **5,20 %** of total production costs (HCS serving in all the district)

Travel time: **5%** of paid work (cost analysis of five HCS).

Source : Aube-Martin et al., 2010.

Research questions

In home-care production, how do production costs vary with the geographical location of users?
What are the effects of local public regulation in terms of productive efficiency and spatial equity?

Theoretical framework

Hypothesis 1: average distribution costs to serve a given area increase if :

- Accessibility costs are high (time and/or distance) ;
- Density of users is low in the area.

We can thus differentiate between several types of areas.

	Easily accessible	Hardly accessible
Highly populated	Area 1 (ex : urban area)	Area 3 (ex: rural towns)
Sparsely populated	Area 2 (ex : suburbs)	Area 4 (ex : moutains)

→ Different types of users : “non-costly users”, “middle-cost users” and “costly users”.

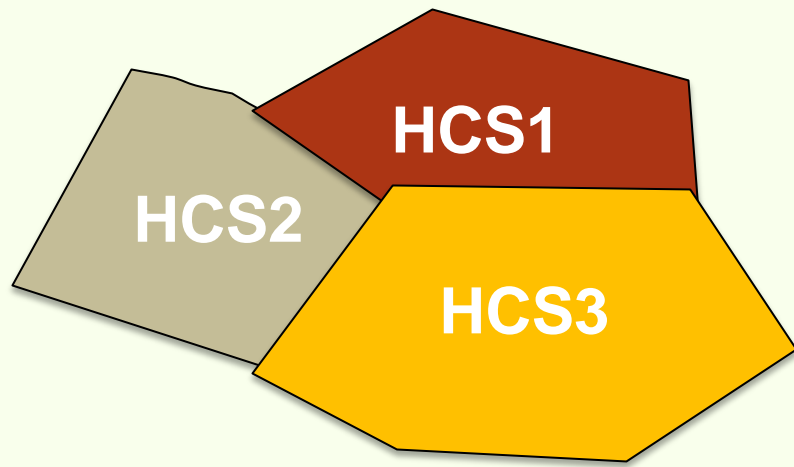
Effect of **pricing** at the average production costs:

- transfers among users: distributive issue?
- higher price for HCS serving costly areas than HCS serving only non-costly areas: equity issue?

Effect of the **definition of distribution areas** :

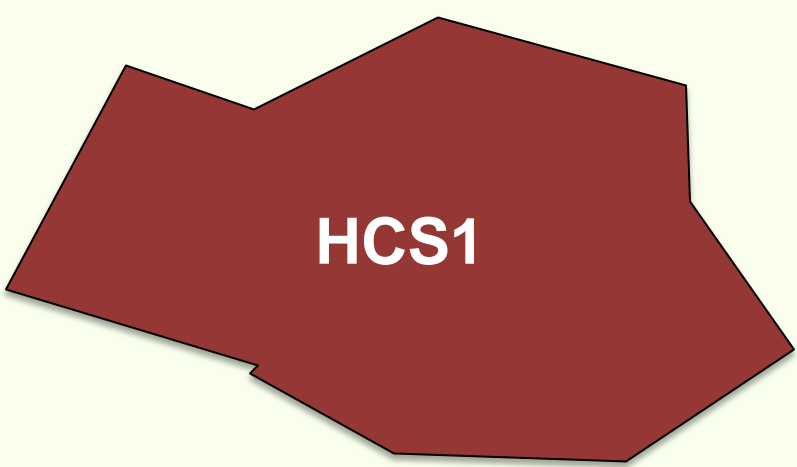
We consider a local district authority having the choice between two policy options in terms of distribution areas of HCS. These two options have different implications for productive efficiency and spatial equity.

Option 1 :
District divided between HCS



- ❑ Minimises the distribution costs
- ❑ But increases the variance of prices within the district, with higher prices in costly areas

Option 2 :
One HCS in the district



- ❑ Increases the distribution costs
- ❑ But guarantees an spatial equalization through transfers between costly and non costly customers

Empirical preliminary work

Aim: testing the statistical link between the size of the distribution area (city, district, region) and the average production cost.

Data: sample of HCS from the national survey *Associations* (INSEE, 2013)

Method: econometric analysis, controlling for HCS characteristics (years of service, diversification of activities, human resources, affiliation to networks...)

Empirical contribution

Aim: testing H1 by measuring the impact of distribution cost on the average production cost in subdivisions of distribution area and concluding on the effect of local public regulation.

Data: from a federation of HCS with a large distribution area in a French district. Approximately 15 000 users living in all the district.

- ❑ Data on users: socio-demographic characteristics, disability level, location, consumption of home care
- ❑ Data on employees: wage rate, location, organization of the round
- ❑ Data on home-care interventions: hours, user, employee

Method:

Computation of the average production cost (analytically, cf pricing process):

- ❑ At the whole distribution area level: **overall average production cost** (1)
- ❑ In subdivisions of the distribution area: **local average production cost** (2)

- Comparison of (1) or (2) to market price and consumer price
- Comparison of (1) to (2) in order to characterize transfers between users
- Simulation of several options of pricing and geographical division on the basis of the previous results.

Potential extensions

- ❑ Robustness check: reproducing the analysis on the data of HCS in another French district to compare the results with two different local regulations
- ❑ Using these results for nursing-home services (differently regulated)

Scientific collaboration

This work is part of the **DITAPA** project studying the link between decentralization of public action and the spatial inequalities in home-care services for the elderly. This project is financed by the **DREES** (call for projects 2015 on local social policies.)

It is also part of a collective work with the **MODAPA Project (ANR / IRESP)**. The MODAPA project brings together economists specialized in the field of long-term care to study demand for home care of the disabled elderly.
www.modapa.cnrs.fr

References

- Aube-Martin P., Bruant-Bisson A., De Reboul J.-B.**, 2010, « Mission relative aux questions de tarification et de solvabilisation des services d'aide à domicile en direction des publics fragiles », IGAS / IGF
- Crampes C., Laffont M.**, 2014, « Connection Pricing and Universal Service Obligations in Distribution Networks », *Competition and Regulation in Network Industries*, 15(1), p. 32-58.
- Fleurbaey M., Trannoy A.**, 1998 « La péréquation territoriale en question », *Flux* 31(14), p.91-98.
- McKay Niccie L.**, 1988, « An Econometric Analysis of Costs and Scale Economies in the Nursing Home Industry », *The Journal of Human Resources*, 23(1), p. 57.